

Conditionals and Prediction

Time, Knowledge, and Causation in Conditional Constructions

This book offers a new and in-depth analysis of English conditional sentences. In a wide-ranging discussion, Dancygier classifies conditional constructions according to time-reference and modality. She shows how the basic meaning parameters of conditionality, such as causation and logical sequence, correlate to formal parameters of the linguistic constructions which are used to express them.

Dancygier suggests that the function of prediction is central to the definition of conditionality, and that conditional sentences display certain formal features – verb forms, typical clause order, or intonation, each of which correlates to aspects of interpretation such as the type of reasoning involved, the role of causality, the use of contextual information, or the speaker's knowledge.

Although the analysis is based primarily on English, it provides a theoretical framework that can be extended cross-linguistically to a broad range of grammatical phenomena. It will be essential reading for scholars and students concerned with the role of conditionals in English and many other languages.

Barbara Dancygier is a Visiting Scholar at the University of California, Berkeley.

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in Conditional Constructions*

BARBARA DANCYGIER



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1 *Conditionals as a category*

1.1 **Constructions, conventional meaning, and the grammar of conditionals**

This book is an attempt to provide a description of a certain fragment of the grammar of English, namely, conditional sentences. By “conditional,” I will mean primarily the sentences so labeled by grammarians (rather than logicians): complex sentences, composed of the main clause (sometimes also called *q*, or the apodosis) and a subordinate clause (*p*, or the protasis). The subordinate clause is introduced by a conjunction, the least marked of English conditional conjunctions being *if*.

The analysis of conditionals attempted here will focus on providing an explanation of how aspects of conditional form give rise to a variety of meanings that conditional sentences express. That is, following the framework of cognitive linguistics, I will not treat the “grammar” as an autonomous formal description of linguistic structure, but rather as a representation of the speaker’s knowledge of linguistic convention. In the cognitive approach (advocated by Fillmore 1977, 1982, Lakoff and Johnson 1980, Langacker 1987, 1991a, 1991b, Lakoff 1987, Fillmore, Kay, and O’Connor 1988, Fillmore and Kay 1994, and many others), it is not possible to speak of grammar in isolation from meaning, on the contrary, grammar is meaningful and essentially symbolic in nature. In Langacker’s Cognitive Grammar, for example, lexicon, morphology, and syntax form “a continuum of symbolic units serving to structure conceptual content for expressive purposes” (Langacker 1987: 35). In Construction Grammar (Fillmore 1988, Fillmore, Kay, and O’Connor 1988, Fillmore and Kay 1994) each grammatical construction (whether lexical or syntactic) has a semantic and/or pragmatic interpretation as part of its description. In cognitive approaches every aspect of the structure and wording of a given sentence is thus considered to make a contribution to its overall interpretation in ways that are governed by linguistic convention. In this work I will attempt to describe how various aspects of the form of conditionals (including the choice of the

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conjunction, verb morphology, intonation, and clause order) map onto various aspects of their interpretation.

Conditionals pose a number of questions. Their logical structure has been a puzzle to philosophers since Aristotle. They have been used as a testing ground for some of the most influential theories in the philosophy of language, such as, for instance, the theory of implicature. Their linguistic form also seems to escape elegant, uniform descriptions and they have been an object of interest to research in a whole range of fields, including syntax, semantics, pragmatics, discourse, language acquisition, history of language, language universals, and language teaching. This is because conditionals have an imposing variety of forms, and a still more overwhelming variety of interpretations. They are an area of language use where the interaction of form, meaning, and context is exceptionally complex and fascinating.

Attempts at unified accounts of conditional meaning have generally been easy targets for criticism precisely because the misleadingly simple *if p, q* structure can receive a great number of widely divergent interpretations. I would like to mention just two examples from two disciplines which have tried to describe conditionals. On the one hand, we have seen a long history of speculation among philosophers about the criteria for the truth of a conditional. The earliest truth-conditional treatment which involves material implication ran into trouble not only because of well-publicized paradoxes, but most importantly, perhaps, because it could not offer an even remotely convincing account of all conditionals. For example, the so-called indicative ones clearly required a different treatment from the so-called subjunctive, or (as many logicians call them) counterfactual ones. Since material implication means that a conditional is false when *p* is true but *q* is false, we might be able to account for truth values in examples such as *If a bird has wings, it can fly*; but we can already see difficulties looming even in cases with future reference (not yet “true”), and worse ones for “counterfactuals” like *If pigs had wings, they could fly* (how do we even evaluate the truth of a conditional where *p* is presumed to be false?). The more recent and more broadly accepted possible worlds solution, at least in one of its versions (Lewis 1976, 1979), acknowledges that a different interpretation is required for indicative and subjunctive conditionals. One might note here that both of the philosophical (or logical) solutions focus on the truth-conditional meaning of conditional sentences, practically disregarding differences in linguistic form. Thus, the assumption seems to be that *if p, q* is indeed a sufficient formal description of a conditional – it just needs to be paired with a similarly transparent logical formula.

On the other hand, there exists an equally longstanding tradition of describing

conditionals in pedagogic grammars. These accounts (e.g. Eckersley and Eckersley 1960, Graver 1971, among hundreds of others) are centered around revealing formal differences among three major types of sentences, such as:

- (1) If I catch/caught/had caught the 11.30 train, I will get/would get/would have gotten to the meeting on time.

The description focuses on the verb forms used in such sentences, while the analysis of meaning is reduced to an absolute minimum: grammars usually mention that different forms may mark temporal reference and reality versus unreality of the condition. No examples of conditionals which have other, less regular verb forms are mentioned. In this model, then, the patterns of forms are the main concern, while other data or arrays of interpretation are not addressed.

Interestingly, a similar focus on the patterns of verb forms is characteristic of some approaches whose objective is primarily the description of syntax, viewed as an autonomous language system. For example, Hornstein (1990) proposes an account of well-formedness of sentences based on what he calls “the syntax of tense.” The account is based on Reichenbach’s theory of tense and offers a formalism which is designed to filter out ill-formed tense configurations. It makes specific claims about the grammatical tense configurations in conditionals, but treats them strictly in formal terms. That is, the principles proposed are meant to obtain regardless of the actual interpretation of sentences, and to account for possible and impossible pairings of verb forms in *p* and *q* clauses independently of the semantic, pragmatic, and contextual factors involved. Thus Hornstein’s analysis (which will be reported in some detail in chapter 2) attempts to reduce the study of conditionals to the study of their form.

The two approaches mentioned are thus trying to describe conditionals either from the point of view of their (logical) meanings or from the point of view of the forms used. It is doubtful, however, that we could obtain a unified analysis by combining the two descriptions into one. First of all, the impression is that different sets of sentences are in fact being interpreted. For example, logicians’ favorite examples, such as *If all men are mortal, then Socrates is mortal* are not considered relevant by the analysts interested in form (like Hornstein) because they fail to show the sort of tense-sequencing manifested in examples like (1). At the same time, some sentences that might be interesting from both a logical and a formal point of view will escape a linguistically revealing analysis because they are too bizarre to be readily contextualized (consider Goodman’s famous *If the match had been scratched, it would not have been dry*). It seems implausible that we can hope to obtain a unified and linguistically sound account of conditionals by combining approaches that have different goals in

analyzing at least partially complementary sets of data; on the other hand, single-framework accounts often fail either by disregarding part of the data and providing an account only of certain “central” cases, or by stretching a single analysis beyond credibility to account for the outlying areas of data.

“One solution fits all” kind of approaches are not common among linguists, because a linguistic analysis cannot fail to notice the significant differences between types of conditionals. Therefore we have seen many interesting proposals which address specific formally distinguished types, uses, or interpretations of conditional sentences (Haiman 1978, 1986, Haegeman and Wekker 1984, Funk 1985, Akatsuka 1986, Van der Auwera 1986, Fillenbaum 1986, König 1986, to mention but a few). There have also been attempts to offer broad guidelines as to what an analysis of conditionals should be sensitive to (Traugott 1985, Comrie 1986). Finally, purely descriptive grammars have become more open to data beyond the realm earlier ruled by language pedagogy – for example, Quirk, Greenbaum, Leech, and Svartvik (1985) use a much broader data base than the one reflected in the earlier 1972 edition of what appears to be the most comprehensive description of the English language. Consequently, we have now been given studies of conditionals which describe the variety of interpretations possible and recognize more of the complex ways in which conditional interpretations are arrived at.

However, in spite of their obvious merit and many fascinating insights into the nature of conditionality, these works have not created a unified analysis of the form and meaning of conditionals. In fact, it is still possible that many of the accounts offered do not even share a common view of what a “conditional” is. What has not emerged from all the impressive work and what is missing is a concept of a conditional as a category. So the crucial question now seems to be not so much “what differences are there?”, because much has been said about them, but rather, “what is it that these various conditionals share over and above the notorious *if p, q*?” If we can identify a common function of the *if p, q* formal structure, it will then be possible to examine the ways in which interpretations of actual conditionals are based on that common function, in combination with the meanings contributed by other formal elements (verb forms, clause order, etc.) and with contextual factors. Divergent meanings of conditionals need not be attributed to divergence in the meaning or function of *if p, q* itself.

In this approach it is not satisfactory to simply document the various meanings of conditionals. Instead, we have to show how they are motivated compositionally. So we have to find out which formal aspects of conditionals are relevant to which aspects of their interpretation. In other words, we need to discover the parameters of conditional meaning as well as the parameters of

conditional form and see how they correlate. It is through this type of analysis that we can discover what different conditionals share in their meaning and their form and thus reveal both the similarities and the differences. In order to do that, we need to not only identify those aspects of the form of conditional sentences that contribute to interpretation but also be able to specify the aspects of the interpretation each formal distinction is connected with. The description will thus cover the role of the component clauses and the conjunction, but will also look for other exponents of grammatically relevant meaning – morphological clues, function words, word and clause order, etc. It will also have to consider the significance of these formal exponents in context.

The grammatical description outlined above will thus view a conditional sentence as an example of a **construction**, as defined and exemplified in works such as Fillmore 1986, 1988, Fillmore, Kay, and O'Connor 1988, Fillmore 1990a, 1990b, Fillmore and Kay 1994, Goldberg 1994, Shibatani and Thompson 1996. A construction is described as a conventional pattern of linguistic structure which is paired with features of interpretation. A construction may thus be specified with respect to lexical, morphological, or syntactic properties, but it will also be provided with semantic and/or pragmatic features of interpretation. The structural part of a construction may involve an assembly of patterns found elsewhere in the language, but in any particular construction the selected patterns are associated with special meaning (semantic, pragmatic, or both). The way in which constructions receive their interpretations is not fully compositional, but the non-predictable semantic and pragmatic information is in fact associated with the formal features of the construction in a conventional way. Therefore, a description of a construction involves an explanation of how its lexical and structural features are mapped onto aspects of interpretation in ways that may be construction-specific.

I will argue that conditionals can be best described within such a framework. Their meaning is determined by a number of form–meaning correlations which are construction-specific. For example, their verb forms signal important aspects of the interpretation (such as the type of reasoning involved, or the speaker's and the hearer's knowledge which constitutes the background for the reasoning), but they do so in ways that affect the whole construction, rather than one clause, and which are specific to conditionals. Furthermore, conditionals in fact represent not a single construction but a set of related constructions, involving a central category (which has a further set of specific constructional characteristics) and other peripheral categories (which inherit only the general conditional construction, and derive the rest of their form from the grammar of English at large). The relatively rich constructional specification of the central

category of conditionals (constraints on verb forms and on pairings of verbs between *p* and *q*, clause order, etc.) is accompanied by a richer and more precise specification of the function of such conditionals; the meaning of the other formal components constrains and adds to the meaning of the general construction. For the types of conditionals with fewer formal specifications, there is a corresponding lack of constraint on the interpretation of the conditional relationship, whose nature will therefore be contextually determined. The constructional approach allows one to identify the formal correlates of conditionality and show how they are assembled to foster a particular type of interpretation.

The analysis of conditionals undertaken here will thus focus on describing what various aspects of conditional form conventionally contribute to interpretation. Conventional meaning includes aspects of interpretation which have been variously labeled as semantic or pragmatic by previous analysts, but which appear to be regularly attached to forms by linguistic convention. It attaches to forms on various levels of linguistic structure: morphemes, phrases, as well as whole constructions. Thus, the fact that the protasis of a conditional construction can be interpreted as a comment on the speech act in the apodosis (Van der Auwera 1986, Sweetser 1984, 1990), or on the choice of linguistic expression used there (Dancygier 1992), is a conventionally established option for interpretation, though it would not be included in the semantics of the construction under a narrowly truth-conditional definition of semantics. Nevertheless, as I will try to show, such interpretations arise in constructions which can be distinguished by some formal parameters, independently of being contextualized in some special way. To sum up, I will review features of conditional form, such as the use of lexical items (first of all, the conjunction *if*), morphology (the verb forms), and structure (clause order and intonation), from the point of view of what they conventionally contribute to the interpretation of conditional constructions. The aspects of interpretation motivated in this way may be semantic and/or pragmatic in nature, and they will affect the overall interpretation of the construction, rather than any of the particular expressions used.

Two recent works on conditionals address the issues raised above at least partially. Sweetser (1990) reveals a dimension of conditional interpretation which shows that conditionals are used as wholes to conduct specific types of reasoning. That is, they cannot be viewed as logically or syntactically governed combinations of randomly selected clauses. They are more accurately described as constructions in which the clauses are connected by specific types of relations. The nature of the relations, in turn, depends on the cognitive domain in which the assumptions expressed by *p* and *q* are considered: in the

content domain causal relations hold between the described events and situations, in the **epistemic** domain the construction links premises and conclusions, in the **speech act** domain *p*'s are used as comments on the speech acts performed in *q*'s. The use of conditionals in the three domains is exemplified in (2), (3), and (4):¹

- (2) If Mary goes, John will go.
(The event of Mary's going might bring about or enable the event of John's going.)
- (3) If John went to that party, (then) he was trying to infuriate Miriam.
(If I know that John went to the party, then I conclude that he went to infuriate Miriam.)
- (4) If I haven't already asked you to do so, please sign the guest book before you go.
(For the purposes of our interaction, let us consider that I make the following request if I didn't previously make it.)

Sweetser shows that ambiguity and semantic change of various other expressions (verbs of perception, modals, conjunctions) result from their being interpreted in these cognitive domains; what is more, the domains themselves are linked via a metaphor which motivates extensions of meaning from the physical into the mental and social domains. The approach not only reveals a fascinating dimension of the interpretation of conditionals, but also, or perhaps first of all, shows that different meanings can and should be analyzed as growing one out of the other. That is, in an analysis of a given ambiguous form it is not enough to say what the differences are, one also has to be able to express generalizations about the relationship between the meanings of polysemous or polyfunctional forms. Sweetser treats the general **if *p*, *q*** construction as having a general semantics, which is (in the sense of Horn [1985, 1989]) pragmatically ambiguous between content, epistemic, and speech-act level interpretations of the conditional relationship.

Another recent study of conditionals (Fillmore 1990a) analyzes the verb forms in conditional sentences as indicative of two aspects of their interpretation: temporal reference and **epistemic stance**. For example, the present tense form *catch* in (1) above is indicative of neutral epistemic stance towards a future event, while *caught* signals **negative epistemic stance** to it. The third form, *had caught*, is here used to express negative stance towards a past event. In this way, Fillmore accounts for a great variety of conditional sentences, showing important form–function correlations. Fillmore thus treats conditionals as constructions, in which the choice of a verb form in one clause is related

¹ All examples and glosses from Sweetser 1990.

to the choice made in the other in a way which is dictated by the overall interpretation of the construction in terms of time and epistemic background, rather than by any strict rules of well-formedness. For example, the choice of “present” and “future” verb forms in the clauses of *If I catch the 11.30 train, I will get to the meeting on time* are not made independently; but the dependence is not based on some formal constraint on sequence of verb forms. Rather, the pairing itself is connected constructionally to a given variety of conditional interpretations. In Fillmore’s analysis the verb forms are thus treated as contributing to the construction’s interpretation in a regular, conventionalized way. The analysis offered in this book has profited a great deal from the insights offered by Fillmore’s work, although the actual contributions of conditional verb forms are here described differently.

There is, however, yet another dimension of analysis to be considered. In a project which seeks to show how interpretations are arrived at, it is important to be able to account for inferential mechanisms which guide interlocutors in their choice of the best form of expression and in interpreting utterances against the contexts in which they are used. There is indeed a rich tradition of frameworks offering explanations of the nature of inferential aspects of interpretation, the origins of which go back to the Gricean theory of implicature. Grice’s (1975) original proposal of the interpretive maxims of Quantity, Quality, Relation, and Manner was a major advance in our understanding of the relation of form-specific conventional meaning to contextually conveyed meaning. In particular, it allowed linguists to see that there were regularities to be observed in contextual interpretation, as well as in “grammar” *per se*. Grice’s treatment of *or* remains a classic example of an analysis which successfully combines a general (or minimally specified) semantics with further interpretive constraints to account for unexpected variation in actual interpretation of a form; *or* does not *mean* exclusive *or*, but *implicates* the exclusive interpretation. (Why would a speaker say *or* if she meant that *and* was a possibility?)

The original seminal concept of implicature stimulated a growth of new ideas in at least two directions: on the one hand, many analyses focused on the possible ways of distinguishing propositional and non-propositional meaning, and on the other hand, attempts were made to revise or expand the set of maxims first proposed by Grice. For example, R. Lakoff (1973) proposes a special set of maxims of politeness (e.g. “Don’t impose,” “Give options,” “Make interlocutor feel good”), while other analysts formulate more general principles of inference, which often involve questioning the validity of particular Gricean maxims. In the latter area, particularly interesting proposals were

made by Horn (1984), who reduces the Gricean maxims to two principles: the Q principle (related to Maxim of Quantity), and the R principle (related to the Maxim of Relation) and shows how inferences based on these give rise to implicata.

An approach which revises the Gricean idea in perhaps the most interesting way is the theory of relevance (Sperber and Wilson 1986), which reduces the set of maxims to just one principle – the Principle of Relevance – and offers an explicit account of inferential processes involved in interpreting utterances. The relevance-theoretic approach claims that utterances come with a guarantee of their optimal relevance, which means that they present the message to the hearer in the way which ensures maximal communicative gain (in Sperber and Wilson's terms, maximal contextual effect) and at the same time minimizes the hearer's processing effort. Hearers are thus assumed to conduct their search for the most relevant interpretation by weighing what was said against what they already know, and (as is argued in Sperber and Wilson [1993]) inferential processes are involved at all levels of interpretation, including the possibility of inferential enrichment of logical form.

What the theory of relevance offers, then, is the most elaborate account of inferential aspects of interpretation, set against a special understanding of the nature and role of context. In most pragmatic theories to date the context is a given, and therefore an interpretation of an utterance is arrived at by eliminating the ambiguities which are incompatible with the context and supplying contextually derived information where the utterance is vague or indeterminate. In Sperber and Wilson's theory, the context is dynamically built in the process of arriving at the optimally relevant interpretation and does not have to be limited to the immediate location and history of the particular speech event. The context, therefore, is not only what the interlocutors have said in the exchange or the immediately surrounding situation, it is all the knowledge the participants bring to bear for the purposes of the interaction. As will be seen throughout this book, such a treatment of context helps to explain how more pragmatically complex relations between protases and apodoses are constructed and understood.

A proper understanding of inference and context is necessary in accounting for important aspects of conditional interpretations. However, there remains the question of the relationship between the aspects of interpretation arrived at via inference, and the rest of the meaning. In a number of theories, the theory of relevance included, it is assumed that pairing the truth-conditional meaning with what is inferred against the context is sufficient to explain the meaning of all utterances. In the constructional approach advocated by Fillmore and Kay,

however, important aspects of meaning of constructions are seen as conventionally associated with certain aspects of their form, in ways which are independent from the interaction of truth-conditional meaning and context. As was shown in Fillmore and Kay (1994), constructions may have a pragmatic force which does not arise from general strategies of inference and which is conventionally associated with the morphosyntactic properties of the construction. Work in Construction Grammar has focused on the aspects of meaning, “semantic” or “pragmatic,” which conventionally attach to a construction. This, however, does not rule out the possibility that interpreting a construction involves recovering both the conventional aspects of meaning and those arising via non-linguistically motivated inference. In fact, I will claim that conditionals are best accounted for if both aspects of their interpretation are treated as equally important. Therefore, I will rely on the constructional approach in looking for meaning correlates of aspects of conditional form, and on the inference-in-context approach (following workers in Relevance Theory) in accounting for contextually determined aspects of conditional interpretations.

To sum up, the description of conditionals to be proposed in this book will be based on several assumptions:

- that it is possible to offer a general and motivated account of the full range of conditional constructions;
- that the description must centrally address form–meaning correlations;
- that among the various uses of a construction some are more central while others more peripheral;
- that the peripheral uses of the construction bear some resemblance to the core;
- that the more central the use of the construction the greater the reliance on conventional meaning; and
- the more peripheral the use of the construction the greater the reliance on the (dynamically constructed) context.

1.2 **Basic parameters of conditionality**

It is necessary, in describing conditionals, to choose a set of descriptive parameters. In my choice, I have been particularly influenced by the work of Comrie (1986) and Fillmore (1990a). Comrie’s proposed set of parameters for the description of conditionals is richer, and therefore more useful, than more parsimonious delineations of conditionality. He accepts a material implication

account of conditionals, but also proposes a list of formal and interpretational parameters which provide guidelines for analyzing conditionals in any language. Among the proposed descriptive dimensions there are some which have to do with the form of a conditional construction (clause order, markers of the protasis and the apodosis), and those that relate to the interpretation (the type of link between *p* and *q*, hypotheticality, temporal reference). Also, as Comrie argues, the description has to address the question of the way in which various aspects of interpretation arise in the construction. For example, in Comrie's analysis some aspects of constructional meaning traditionally associated with the form of the conditional (like counterfactuality) are claimed to arise through implicature.

The description to be offered in this book will try to characterize conditional constructions in English along major parameters of form and interpretation, very much like the parameters proposed by Comrie. The sections below will give a brief description of the parameters chosen.

1.2.1 *The if p, (then) q frame: its aspects and varieties*

The first requirement of a more general analysis of conditionals is a definition of the category to be analyzed. For precisely what class of forms are we seeking a motivated treatment? In the first paragraph above I suggested that the broadest definition should see conditionals as complex sentences composed of two clauses: the main clause and the subordinate clause. The subordinate clause is also introduced with a conditional conjunction *if*. This definition seems to be most appropriate from the point of view of the task undertaken here: it provides a general specification of a broad formal class. *If p, q* covers a range including the most common conditional sentence types; it likewise shows a wide variety of interpretations, which have proven difficult for analysts to bring together. There are other constructions which have conditional meaning, but a different form – for example, coordinate constructions with imperatives, as in *Say one more word and I'll kill you*. These constructions have repeatedly been claimed to be (at least partly) derived from conditionals or to be conditionals in disguise (e.g. Lawler 1975, Bolinger 1977, Lakoff 1972a, Fraser 1969, 1971). They do undoubtedly have an interpretation which resembles that of many conditionals, but they will be treated here as independent constructions. There is, of course, an interesting question to consider: how is it possible for two different constructions to share an area of interpretation? I will touch upon the question in the last chapter and point out some features that certain conditionals share with coordinate imperative constructions, but the assumption throughout the book will be

that the standard example of a conditional has two clauses and a conditional conjunction.

Of course, there are many varieties of conditionals within this very broad formula. First of all, different types of sentences can serve as main clauses of conditionals: declaratives, questions and imperatives can all be used as *q*'s. Second, both protases and apodoses can be used in an elliptical form in appropriate contexts (e.g. *If not now, then maybe next week*). Also, there are conjunctions other than *if* which are conditional as well, for example *unless*, and *if* itself can appear in combinations with *only* or *even*. Finally, there is the conjunction *then*, which often introduces main clauses of conditional constructions, but is usually not necessary. All these variations within the pattern influence the interpretation of the conditional, but treating the *if p, q* structure as the broadest syntactic frame allows one to see the ways in which other added formal elements affect the interpretation of the general construction.

The *if p, q* formula represents the basic conditional construction in another respect as well. It instantiates the clause order which has been found to be most typical (if not universal) in conditional sentences (see Greenberg 1963, Comrie 1986, Ford and Thompson 1986, Ford 1993). One might think that the "subordinate clause–main clause" order is a feature of a larger class of sentences (perhaps sentences with adverbial clauses), not just of conditionals, but a recent study of clause order in adverbial sentences (Ford 1993) does not support the suggestion. Ford has shown that temporal, conditional, and causal clauses have very different patterns of sentence organization. Temporal clauses are most often pre-verbal and sometimes sentence-initial, *because*-clauses are predominantly sentence-final, while *if*-clauses are most commonly initial. As Ford claims, these generalizations can be explained by general rules of discourse organization and by the specific semantic and discourse functions of the adverbial clauses under scrutiny. This means that in order to understand how conditionals are used we have to understand how the initial or final position of the *if*-clause affects the general interpretation of the sentence as well as of the relationship between the protasis and the apodosis. What is more, conditionals seem to also allow a configuration where the *if*-clause is actually inside the main clause, as in *My significant other, if that's the expression to use these days, has just bought me a diamond ring*. Ford's corpus did not contain any such sentences, but they seem acceptable, even if not very common. The clause order, then, is yet another parameter to be considered by the descriptive grammarian.

As I noted above, recent work (Sweetser 1990) has shown that overall interpretations of conditionals can be seen in terms of different cognitive domains in

which the assumptions² expressed by *p* and *q* are related. Thus Sweetser distinguishes the *content* domain, the *epistemic* domain, and the *speech act* domain. The relations linking *p* and *q* are construed differently, depending on the domain in which the conditional relationship applies. Thus, clauses in the content domain are linked causally; in the epistemic domain the protasis expresses a premise and the apodosis a conclusion; in the speech act domain protases express conditions which render speech acts in the apodoses relevant and felicitous. As I have argued elsewhere (Dancygier 1986, 1992, 1993) the clauses of an *if p, q* construction can also be linked metatextually, with the apodosis performing its usual assertive function, and with the protasis providing a comment on some aspect of the linguistic form of the apodosis. In some earlier works (Dancygier 1990, 1993) I have also tried to show that these interpretations correlate with some formal parameters of conditional constructions: verb forms, clause order, and intonation. Thus the nature of the relationship between *p* and *q* will be assumed to be one of the essential aspects of constructional meaning.

Contrary to many other accounts of conditionals, I will not assume that there are infinitely many types of protasis/apodosis relations and that they can be explained against the context and the speaker's or hearer's beliefs only. The relations I have found fall into several classes and rely on the nature of the cognitive domain as well as on the context, but are also correlated with some formal exponents. I will argue, therefore, that the type of relation between *p* and *q* is an important, if not essential, element of constructional meaning and that many other formal distinctions are related to this aspect of interpretation. In fact, the correlations between the conditional construction's form and the cognitive domain in which it is interpreted have been documented in German: Köpcke and Panther (1989) discovered word order differences between content conditionals and conditionals in other domains.

Furthermore, the interpretation of the relation between *p* and *q* is crucial to

² Throughout the text I will use the term "assumption" to refer to *p* and *q* on any level other than their syntactic form. Even though the term may suggest a strong commitment on the part of the speaker (perhaps close to "belief"), which is often inappropriate in the case of conditionals, it still seems useful for several reasons – it is less concerned with truth or falsehood than "proposition" and at the same time less specific and objective than "content" or "meaning." The problem is that *p* and *q* appear in conditionals with varying degrees of commitment on the part of the speaker, and are brought into the construction for different purposes; also, there are many ways in which they are grounded in the speaker's knowledge and the context of the utterance. It is important, however, that the term we use recognize the fact that *p* and *q* are entertained (or considered) by a specific speaker, who nevertheless considers them with a varying degree of commitment. Still, they are provisionally "assumed" for the sake of the reasoning process the conditional is involved in carrying out.

the interpretation of the whole construction, because in a prototypical conditional the connection between the assumptions in the two clauses is what is actually being asserted (in the speech act sense of the word assertion). That is, a sentence such as *If it gets colder, we'll turn the heating on*, which is interpreted in the content domain, does not in any way commit the speaker to the belief that it will get colder or that the heating will be turned on. It does, however, communicate the belief that the change in temperature will result in turning the heating on. In other words, what is asserted is the causal connection between *p* and *q*, not the clauses themselves. As it has already been suggested, there may be several ways in which *p* and *q* are connected, but in each case the type of connection will play a central role in the interpretation of the construction.

1.2.2 *The role of if: constructional meaning, non-assertiveness, and mental spaces*

The most controversial aspect of conditional constructions is the contribution of *if* itself to the meaning of the utterance as a whole. The semantic development and content of conditional markers is in itself an interesting issue (see Traugott 1985). But in the majority of analyses of conditionality, *if* is seen as the primary exponent of conditional meaning in English.

In classical analyses offered by philosophers, *if* takes all the weight in accounting for the semantics of the construction. The meaning attributed to conditionals in these studies is most often seen as truth-conditional.³ However, numerous studies have claimed that material implication is not an adequate representation of the semantics of conditionals. It has been shown that assigning positive truth value to sentences with false antecedents leads to numerous paradoxes and that logically correct reasonings are often intuitively unacceptable (in the simplest case, saying *If you submit your thesis this month, we'll consider your application* is never interpreted to mean that failure to submit the thesis will also result in the application being considered, though such an interpretation is logically correct), that material implication cannot be used in interpreting *if* compounds such as *even if* and *only if*, etc. The list of such problems is indeed long and impressive.

Even with a richer theory than the purely truth-conditional ones, it remains difficult to evaluate the degree to which an analysis of *if* as a logical connective can account for the actual processes of arriving at particular interpretations of particular conditionals in particular contexts. One significant attempt at clar-

³ For a broad overview of both truth-functional and other logico-philosophical approaches see Jackson 1987 and 1991.

ifying the relationship between truth-conditional meaning and interpretation has been made by Smith and Smith (1988). In the paper the authors review the major paradoxes of material implication to demonstrate that the truth-conditional account can be saved if it is paired with the theory of relevance.⁴ In other words, Smith and Smith argue that material implication is indeed the only semantic tool one needs in analyzing conditionals. The paradoxes are resolved by demonstrating how the theory of relevance accounts for the fact that some logically consistent interpretations are not accepted as communicatively useful or that some sentences are never said. Let us look at two (out of many) examples discussed by Smith and Smith (1988).

The first one has to do with conditionals with false antecedents, which, as Smith and Smith put it, have “been . . . a perennial problem for traditional semantic treatments” (1988: 325). The problem consists in the fact that the truth table for material implication treats conditional sentences as true not only when both clauses are true, but also when the antecedent is false. Thus, Smith and Smith’s example, given here as (5):

- (5) If you mow the lawn, I’ll give you \$5.

can be logically interpreted to mean that the addressee may get the money if he mows the lawn, and also if he doesn’t. In actual communication, however, the sentence is interpreted in such a way that mowing will be paid for, while failure to mow will not be paid for. The relevance-theoretic account of this is as follows: utterances come with a guarantee of optimal relevance, that is, the speaker formulates them in such a way as to minimize the hearer’s processing effort and to maximize contextual implications (what the hearer will get out of the utterance). If the speaker were ready to pay whether the mowing is done or not (*p* or *not p*), she would have simply said that she would give the hearer \$5 (*q*), and spare him the effort of processing the *if*-clause. Since the speaker chooses to mention the mowing, she also implies a “no work, no pay” belief. Thus, as Smith and Smith put it, “the putatively undesirable reading . . . doesn’t emerge” (1988: 333).

The repair offered by Smith and Smith is certainly convincing. Why would the speaker mention *p* if it were not to be processed as a background to *q*? One might also add that considering both *p* and *not p* as valid with *q* being true would probably result in the speaker saying *Whether you mow the lawn or not, I’ll give you \$5*, rather than just *q*. Such a repair, though, is still faithful to the principle of relevance. However, a number of crucial questions remain

⁴ An earlier version of the argument can be found in Smith 1983.

unanswered by the claims that *if* is a logical connective, that this is all the semantics we will ever have, and that only the interpretations reasonable to the hearer will come up. First of all, how do linguistic clues given in the sentences help the hearer arrive at the interpretation, or how does it happen that some patterns of form welcome some interpretations but exclude others? How does it happen, for instance, that (5) welcomes a causal interpretation similar to (2) (*If Mary goes, John will go*), but is not likely to be understood as a conclusion, along with (3) (*If John went to that party, he was trying to infuriate Miriam*)? How does the hearer assign a future interpretation to the protasis of (5), but not to the protasis of *If you mow the lawn, you get pollen in your hair*? How does the hearer know that the protasis of (3) refers to the past, while the protasis of *If John went to the party, he would see Miriam there* does not? There are many such questions that have remained largely unanswered so far and a satisfactory account of conditionals requires that such answers be provided. Let us consider another example from Smith and Smith (1988) – the famous pair of sentences first discussed by Adams (1970):

- (6) If Oswald did not kill Kennedy, then someone else did.
- (7) If Oswald had not killed Kennedy, then someone else would have.

Apparently the fact that (6) is commonly interpreted as true and (7) as false has made many philosophers claim that material implication can perhaps account for some conditionals (like 6), but not for all (not for 7).

Smith and Smith point out that both (6) and (7) can receive different truth values if they are processed against a different set of assumptions than the ones invoked by standard analyses. Thus, if the hearer believes Kennedy to be still alive, (6) becomes false. Similarly, if the hearer believes that Oswald participated in a conspiracy of assassins, (7) becomes true. Many logical accounts of conditionals have certainly failed to see how conditional interpretations are rooted in the speaker's and the hearer's beliefs, which may or may not be shared. The fact that conditionals can often be interpreted in more than one way also needs to be more broadly recognized. But there are still further questions to be asked and answered. How does the hearer know that the most immediately plausible interpretation of (6) is one which attributes to the speaker the assumption (which the hearer does not have to share) that Oswald did not kill Kennedy, while in the case of (7) the probable underlying assumption is that he did? The answer is widely known – the hearer's primary clues are different verb forms. But in that case, we need some account of how verb morphology can be conventionally interpreted in this way, especially since not every case of Past/Past Perfect contrast invokes such differences (*I bought my ticket before I bought*

yours versus *I had bought my ticket before I bought yours* does not imply any difference in underlying assumptions). Also, why cannot one say **If Oswald didn't kill Kennedy, then someone else would have* or **If Oswald hadn't killed Kennedy, then someone else did*?

Answers to such questions cannot be offered if we insist on treating *if* solely as a logical connective, and give all the responsibility for any non-logical interpretation to contextual (“pragmatic”) factors. In particular, such an approach cannot account for the role of particular form/meaning mappings in building the interpretation of the whole construction (Dancygier 1993, Sweetser 1996b). It is necessary that we treat conditionals as wholes – as constructions – rather than analyzing independent propositions against a truth table and context. Once we accept *if*'s role as a lexical exponent of a specific meaning in a construction it builds, we will see how its contribution to the interpretation is different from what is motivated by clause order configurations or verb forms. As I will try to show, verb forms are in fact the best indicators of intended interpretations of conditionals (which gives special weight to all the questions raised above with respect to [5], [6], and [7]). They are crucial exponents of various aspects of conventional meaning expressed by the constructions. But they cannot be considered independently of the use of *if*, because the meanings in question arise on the constructional level, not in verb phrases or even clauses themselves: “past” verb forms take on “counterfactual” readings specifically in conditional formal contexts.

Another question one can pose is this: in exactly what sense does the interpretation of (5) rely on the protasis and the apodosis being interpreted as true (putting their potential falsehood aside for the moment)? The sentence performs a speech act of the type that Fillenbaum (1986) calls an inducement. The speaker is trying to get the hearer to do *p* by offering the reward described in *q*. The hearer can say “no,” or bargain for a better reward, etc. At no point in the saying or interpreting of (5) is it clear that *p* or *q* are true or even that they are judged primarily with respect to factuality. What is more, the speaker may say (5) even if she expects the hearer not to accept the offer – it is then still valid for the hearer to believe that *p* will result in *q*. Finally, if the offer is accepted, the hearer and the speaker have each accepted certain obligations – to mow the lawn, and to pay, respectively. But this is not part of the interpretation of (5) and these are still beliefs about the future, not verifiable assertions.

What seems to be the case is that conditionals like (5) do not overtly express the speaker's beliefs about *p* or *q* being true as independent assumptions. In fact, the analysis of different types of conditionals offered by Akatsuka (1986) shows that the concepts of “truth” and “falsity” in conditionals may be

context-dependent and depends crucially on the speaker's and the hearer's viewpoint. In the examples she looks at, such as *If you are the Pope, I'm the Empress of China* (presumably an attested example of a response to a caller identifying himself as the Pope), the addressee seems to believe *p* to be true, while the speaker makes it clear that she believes it to be false. As Akatsuka points out, examples like these shift the question of the truth or falsity of conditional clauses to a different level of analysis.

I will assume, then, that the clauses of a conditional should not be treated as assertions of true or false propositions. I will also argue that the fact that participant clauses of conditionals are not asserted in the traditional sense, or at least not interpreted as factual, seems to be attributable solely to the presence of *if*. Whatever its interpretation as a logical connective, *if* in natural languages is an exponent of a special status of the assumption in its scope. The status is probably best described with reference to Searle's (1969) definition of the speech act of asserting. In Searle's description, to assert (affirm, or state) an assumption counts as an expression of the speaker's belief. The felicity conditions for the speech act of asserting (as stated in Searle 1969 and 1979) require that the speaker have evidence to support her belief and actually believe the assumption to be true, and that the hearer not be known to share the same belief (needs to be told or reminded about it). Searle stresses repeatedly that assertion is an act, which counts as the speaker's commitment to the truth of a proposition, but should be sharply distinguished from the proposition itself. In what follows I will argue that *if* functions as an instruction for the hearer to treat the assumption in its scope as not being asserted in the usual way.

Treating assertions as speech acts opens up the issue of how utterances come to be interpreted that way. While there may be few formal exponents of the act of asserting (indeed, even declarative/indicative utterance forms are often seen as neutral, rather than as marking a declarative function), non-assertive utterances are often distinguished formally; in particular, the grammatical category of mood can be interpreted along these lines, as imperatives and questions (and conditional mood in languages that have one) are used to express assumptions which the speaker is not treating as factual. In the case of *if*-clauses, however, the form of the clause is often declarative, and, consequently, one might predict that conditionals without special forms like conditional mood should be interpreted by the hearer as reflecting the speaker's belief about a certain state of affairs.

However, what the presence of *if* seems to signal is that at least some of the felicity conditions for asserting do not hold: the speaker does not have enough grounds for asserting *p* as a factual statement and may in fact not believe *p* to be

true. It is a well-known fact that conditional protases are often interpreted as “contrary to fact” (on a regular basis in sentences that have often been called “counterfactual,” but also in sentences with indicative forms, such as the so-called “indicative counterfactuals” of the type *If he is a college professor, I am the Easter Bunny*). It is also well known that many conditionals refer to the future, and therefore cannot be interpreted as assertive. But there is also a large class of conditional sentences whose protases have been labeled as “given,” either because they are assumed in context to be true or because they are actively asserted in preceding discourse. For example, the speaker of *If (as you say) John left for France last week, we need another interpreter* does not necessarily express any doubt at all about the truth of the protasis, but may be fully accepting the truth of the interlocutor’s claim, even if she does not mark that full acceptance with a non-conditional form. I will try to show, however, that even in such cases the presence of *if* requires an interpretation under which the assumption in its scope does not count as an act of asserting (it repeats the hearer’s preceding assertion, thus violating one of the felicity conditions, and does not always count as an expression of the speaker’s belief). Taking *if* as a marker of non-assertion does not mean that speakers always have the same reasons for not engaging in full assertion. Indeed, other components of the sentence form are likely to reflect the aspects of the speaker’s own beliefs (positive, negative, or neutral) about the content, and about the hearer’s beliefs, which motivate the use of a non-assertive form. Thus the ways in which conditionals receive non-assertive interpretations may vary, but the role of *if* as a signal of non-assertive meanings remains constant.

The contrast between the truth of a proposition and an assertion of a statement is also used by Horn in his work on negation (1985, 1989), which will be addressed in some detail in section 3.5.1. His analysis of the pragmatic ambiguity of negation is based on the work of Grice (1967) and Dummett (1973) which recognizes a use of negation which signals the speaker’s refusal to assert a proposition, rather than her assertion of its falsehood. Thus, in Horn’s terms, a sentence like *The cake isn’t good, it’s divine!* uses negation to mark **unassertability**, not falsehood, since the speaker does not intend to deny a positive evaluation of the cake, but rather refuses to describe its qualities with the word proposed. As Horn says, the notion of assertability “must be taken as elliptical for something like ‘felicitously assertable’ or ‘appropriately assertable’” (1989: 379), which relates it to the Searlean act of asserting recalled above. When an assumption needs to be entertained or considered, but cannot be asserted felicitously, it will be presented as **unassertable**. In chapter 3, conditional protases will be analyzed in terms of reasons the speakers have to present assumptions in

the scope of *if*; they will be treated as non-assertive, within a framework of unassertability like that used by Horn.

As the discussion so far suggests, the type of analysis attempted here, which will look at conditionals as constructions and explore form–meaning mappings that give rise to a variety of related, but different interpretations, is incompatible with a framework which treats *if* primarily as a logical connective. As I noted above, it is also not sufficient to enrich a truth-conditional type of semantics with an account of inferential processes guiding hearers in their search for interpretations, although an understanding of such processes is of course indispensable. What is needed is an approach which helps us see a variety of ways in which language forms themselves participate in the construction of meaningful discourse. At one level (so far referred to as constructional) this requires that we document the meanings that linguistic elements (be they lexical, morphological, or syntactic) carry by virtue of linguistic conventions. At another level, though, this means exploring the ways in which linguistic communication is involved in building extra-linguistic cognitive structure. The framework which offers a paradigm for describing the latter has been offered by Fauconnier (1985/1994 and 1996) in his theory of *mental spaces*.

Mental spaces are “constructs distinct from linguistic structures but built up in any discourse according to guidelines provided by the linguistic expressions.” (Fauconnier 1985: 16). For example, a speaker may build up an understanding of some state of affairs (present or non-present, realis or irrealis), or of other structured domains such as depictions (pictures, plays) or frames (interaction in a restaurant, for example). The hearer is guided by the speaker’s language to set up mental constructs parallel to those of the speaker, and also to move from one mental space to another. Thus certain expressions, called space-builders, establish new spaces or refer back to the spaces that have already been established. A variety of expressions can perform the space-building function: *in the picture*, *in 1950*, *in my opinion*, *probably*, *X believes*, etc. All such expressions set up a mental space which is included in its parent space (in the simplest case, the speaker’s conceived reality space), and in each case there is a pragmatic connector linking the new space and the parent space (or, more specifically, elements in the two spaces). For example, a sentence such as *In that movie, Clint Eastwood is a villain*, the expression *in that movie* sets up a “movie” space, embedded in the reality space, and the two spaces are connected by pragmatic connectors going from actors to characters they represent. This allows the name of an actor to be used to refer to a character played by that actor.

Mental spaces can be set up with respect to various domains: time, geograph-

ical space, domain of activity. A specific type of mental space, however, is also built by linguistic expressions such as *if*: in this case, *if* p structures a mental space in which q holds as well. The kind of space set up by *if* is hypothetical in the broad sense of the word, that is, the space builder itself does not pre-determine whether the space will be counterfactual (in the logician's sense) or not. The particular relation between the parent (reality) space and the conditional space being set up will be constrained lexically or grammatically (by specialized verb morphology), but the actual interpretation of spaces as compatible or incompatible is not a matter of language only, but primarily of the structure of the spaces, as they are built and negotiated in discourse.

The view of space construction offered by Fauconnier is different from, among others, the "possible worlds" approach, in that new mental spaces are structured only locally and partially; the needs of particular discourse determine how much of the parent space is inherited by the new space. That is, a conditional space can be constructed by simply adding p to the reality space, and all the relevant local structure of reality space is inherited. There is no specific linguistic algorithm for building hypothetical spaces out of the reality space (though there may be linguistic constraints on such construction), and pragmatics will constrain the kinds of dependencies between the two spaces. But in each case the structuring will serve particular communicative goals, rather than setting up a world for the evaluation of truth values. As Fauconnier argues, there is no point in trying to evaluate the truth of sentences like *If Napoleon had been the son of Alexander, he would have been Macedonian* or *If Napoleon had been the son of Alexander, Alexander would have been Corsican*, because there is no "absolute" truth when only some facts and laws are imported into the hypothetical space, and those that are imported are selected to carry out a specific reasoning. The general point Fauconnier is making in this argument is that whether there is a possible world in which these sentences are true or not has no bearing on their linguistic status, that is, on the fact that sentences like these are easy to construct, process, and use. In other words, the algorithm for arriving at the truth conditions of a conditional sentence should not be confused with its semantics (in the broad sense of the word).

Fauconnier's approach, as formulated in Fauconnier (1996), takes a view of linguistic semantics which opposes the traditional truth-conditional accounts in important ways. As he puts it: "as discourse unfolds and mental spaces are set up, the recovery of meaning fundamentally depends on the capacity to induce shared structures, map them from space to space, and extend the mappings so that additional structure is introduced and exported" (1996: 67). This view of construction of meaning assumes the availability of various aspects of the speaker's and

hearer's knowledge at any stage of interpretation, and sees the knowledge (which includes linguistic knowledge) as structured by cognitive constructs of various types: frames (e.g. Fillmore 1982 and 1985) and idealized cognitive models (Lakoff 1987), as well as cultural models and folk theories (Holland and Quinn 1987). It also invites the use of current context and discourse structure as new cognitive structure is built, rather than strictly distinguishing between pre-pragmatic (truth-conditional?) and pragmatic aspects of interpretation. There is, in this framework, no way of establishing a pre-pragmatic "meaning," since conventional aspects of the meanings of morphemes and constructions are in essence all communicative prompts towards pragmatic construction of spaces. Their compositional interpretation depends on the construction process at hand, as well as on the conventions of the grammar.

Structure is transferred across spaces in a variety of ways. Fauconnier describes a number of mechanisms for this transfer of structure, generally referred to as Spreading. For example, mental space construction involves creating counterparts of entities present in the parent space (via the so-called Access Principle). That is, in the now classic example first mentioned by Jackendoff (1975), *In Len's painting, the girl with blue eyes has green eyes*, the "picture" space creates a green-eyed counterpart of the blue-eyed girl from the reality space. Fauconnier's point here is that the linguistic expression describing the painter's model can be used to identify the image in the picture, that is, counterparts can be accessed across spaces via pragmatic connectors such as the "image" connector in this case.

Other Spreading mechanisms involve inheritance of structure from the parent space to the child space and projection of semantic frames along with transferred counterparts. For example, a sentence such as *If I had caught the 11.30 train, I would have gotten to the meeting on time* (first given in [1] above) sets up a conditional space which has a counterpart of the subject referred to as *I* and preserves a wide range of relations, frames, and other mental constructs involved. That is, it still assumes that catching this particular train was sufficient to get the subject to the meeting on time, while missing it meant being late, that being late to meetings is undesirable, that the subject's presence at the meeting was expected, that trains run according to set schedules, etc. The space is different from the reality space only in one explicit respect – that in the reality space the subject missed the train and was late to the meeting, while in the new space the opposite is the case. So building this new space does not involve situations beyond what is particularly mentioned as the space is set up – it does not, for instance, consider the situation whereby the subject caught the desired train but then got stuck between stations because of power failure or engaged in an

animated discussion with another passenger and got off one station later, in each case being late to the meeting or missing it altogether.

At the most general level, *if* is thus a space builder for conditional (hypothetical) spaces. As Fauconnier argues, the particular type of space structuring will be determined by the use of linguistic form, but also by the pragmatic constraints on the particular discourse. In this project I will thus try to show how this type of space structuring is constrained by linguistically relevant facts. For example, at the level of linguistic structure, *if* itself plays a specific role as a lexical exponent of the conditional constructions in which the protases and apodoses are interpreted non-assertively. Other aspects of the constructions, such as, among others, verb morphology, will specify the space construction as taking place to serve specific types of reasonings in various cognitive domains (for specific correlations between mental space building and conditional form see Sweetser 1996a, 1996b, Dancygier and Sweetser 1996). The analysis of the speaker's and hearer's assumptions and their use of contextual clues will show how pragmatic factors constrain the nature of space structuring. Also, a look at clause order and intonation will reveal how conditional spaces function in a broader discourse setting. In other words, the analysis undertaken here has the goal of reviewing all the linguistically relevant parameters of conditional space construction.

To sum up, *if* has been argued to have three functions. At the most general level, it is a linguistic exponent of the mental process of space construction – it is a space builder for conditional spaces. As a lexical item, it is a marker of non-assertiveness and its presence in front of an assumption indicates that the speaker has reasons to present this assumption as unassertable. At the constructional level, *if* introduces one of the clauses of a conditional construction, which presents the assumptions *p* and *q* as connected in a given cognitive domain and uses an array of specific conventional form–meaning mappings to determine all aspects of the construction's meaning.

The analysis postulated in the chapters to follow will address all the aspects of conditional interpretations mentioned above. In chapter 2 I will discuss verb forms; choice of verb form is the formal parameter which plays the most significant role in indicating such aspects of the construction's meanings as time, speaker's background assumptions, type of distancing, etc. Verb forms will be claimed to fall into two major classes: predictive ones, where the modal verb *will* is used to mark predictive meaning, and non-predictive ones, where other verbs are used. The proposed solution will be compared with other current descriptions of the use of verbs in conditionals. Chapter 3 will describe types of

protasis/apodosis relations in greater detail. I will consider sequentiality and causality, as well as inferential, speech act, and metatextual relations. In chapter 4 I will address the question of the speaker's beliefs about the content, and about the hearer's knowledge state; I will show how these beliefs influence the choice of formal construction, and correlate with types of *p/q* relations. The next two chapters will consider in some detail how the form of the clauses and their order contribute to interpretation, and how other conjunctions interact with conditional meaning (I will consider *unless* and *even if* in greater detail). Finally, in chapter 7 I will review some of the main claims of the book to propose an account of prototypical conditionality. I will then try to use the proposed prototype to offer some explanation of how conditional meanings may arise in the absence of explicit expressions of conditionality. In particular, I will look at some conjunction-less conditionals (e.g. conditionals with inversion in the protasis) and at some constructions (e.g. coordinate imperative sentences) which acquire conditional meaning in spite of non-conditional form.

Conditionals will thus emerge as a cognitive category in the sense described by Berlin and Kay (1969), Rosch (1977, 1978), and Lakoff (1987). Different sub-types of conditionals may be "better" or "worse" examples of the category, in the sense of being more or less central members; and various sub-types may be more connected by common resemblance to more central cases than by resemblance to each other. The divergent meanings and interpretations of conditional structure nonetheless stem from a common core.

My goal is to systematically lay out the particular form–meaning mappings relevant to the description of conditional constructions. Such a description of parameters of conditionality should offer an understanding of how conditionals can be viewed as a category. In particular, it will allow me to distinguish the central case as well as study the mechanisms relating the less central uses to the prototype.